CLAIMS

Please amend the presently pending claims as follows.

1. (Previously Presented) A method for coding a hardware description of a peripheral device, the method comprising:

configuring a function block to instantiate multiple instances of the peripheral device within a single chip design, the hardware description of the peripheral device having options associated with different configurations of the peripheral device;

selecting between the options at compile time for each instance of the peripheral device such that at least two of the instances have different configurations from one another, wherein the options are selected without modification to the hardware description; and

compiling the hardware description to produce a structural model comprising each instance of the peripheral device with the selected options for that instance.

2. (Previously Presented) The method of claim 1 wherein the step of selecting comprises:

passing a parameter value to the function block at compile time for each instance of the hardware peripheral; and

instantiating the peripheral device using code according to the parameter value.

3. (Currently Amended) The method of claim 1 wherein the configuration options ~~are~~ comprise at least one of peripheral design functions, peripheral design pin widths, or peripheral design interface pin outs.

4. (Currently Amended) The method of claim 1 ~~and further comprising~~ wherein selecting between options at compile time comprises:

tying strap pins to power or ground.

5. (Original) The method of claim 1 wherein the step of configuring comprises:

configuring the function block with local runtime constants adapted to be overridden individually at compile time.

6. (Original) The method of claim 5 wherein the step of selecting comprises

overriding selected runtime constants at compile time to select between the variable options for each instance of the peripheral device.

7. (Previously Presented) A method for coding a reusable hardware description of a peripheral device, the method comprising:

configuring a function block to instantiate multiple instances of the peripheral device within an integrated circuit design, the reusable hardware description of the peripheral device having options selectable at compile time;

instantiating the multiple instances of the peripheral device on the integrated circuit design by programmatically selecting between the options at compile time for each instance of the peripheral device so that at least two of the instances have different configurations; and

compiling the reusable hardware description to produce a structural model comprising the multiple instances of the peripheral device, each with the selected options and resulting configuration for that instance.

8. (Original) The method of claim 7 wherein the variable options are selected without modification to the reusable hardware description.

9. (Previously Presented) The method of claim 7 wherein the step of configuring comprises:

adding one or more peripheral devices based on desired features of the reusable

hardware to the integrated circuit design at compile time.

10. (Previously Presented) The method of claim 7 wherein the step of configuring comprises:

instantiating peripheral devices onto the integrated circuit according to the reusable hardware description wherein the configuration of each instance is unique based on a design parameter.

11. (Original) The method of claim 10 wherein the design parameter comprises a signal width of the peripheral device.

12. (Currently Amended) The method of claim 7 ~~and further comprising~~ wherein instantiating further comprises:

~~defining~~ selecting between the options to define further the function block by tying strap pins to ground or to power.

13. (Original) The method of claim 7 wherein the step of configuring further comprises:

configuring the function block with parameters local in scope, the parameters adapted to be overridden individually at compile time.

14. (Original) The method of claim 13 wherein the step of selecting comprises

overriding selected runtime constants at compile time to select between the options for each instance of the peripheral device.

15. (Previously Presented) The method of claim 7 wherein the step of configuring comprises:

passing a parameter value to the function block at compile time for each instance of the peripheral device; and

instantiating the peripheral device using the reusable hardware description according to the parameter value.

16. (Previously Presented) A method for instantiating multiple instances of a peripheral device within an integrated circuit design, the method comprising:

configuring a hardware description block to describe the peripheral device and to describe options associated with different configurations of the peripheral device; and

selecting between the options at compile time for each of the multiple instances of the peripheral device without modifying the hardware description block; and

compiling the hardware description to produce a structural model comprising the multiple instances of the peripheral device, each instance having the selected options for that instance, wherein the selected options for at least two of the multiple instances are different from one another so that the at least two instances have different configurations.

17. (Previously Presented) The method of claim 16 wherein the step of selecting comprises:

passing a parameter value to the function block at compile time for each instance of the hardware peripheral; and

instantiating the peripheral device with options determined by the parameter value.

18. (Original) The method of claim 16 wherein the step of configuring comprises:

coding the hardware description block with local runtime constants adapted to be overridden individually at compile time.

19. (Original) The method of claim 16 wherein the variable options comprise local runtime constants and wherein the step of selecting comprises:

selecting one or more of the local runtime constants at compile time; and

overriding the selected one or more of the local runtime constants to differentiate each instance of the peripheral device as needed.

20. (Currently Amended) The method of claim 16 wherein the options comprise at least one of peripheral device functions, peripheral device pin widths or peripheral device signal widths.